Danny Lennon: Hello and welcome to Sigma Nutrition Radio, the podcast that brings you evidence-based discussions with the world's leading researchers and practitioners in fields related to nutrition and performance. I am your host, Danny Lennon, and you are listening to Episode 140 of the podcast.

First, I just want to let you know that my good friends over at Shredded by Science have now opened the doors to their prestigious SBS Academy. From the foundations of coaching through to the most intricate details of physique and strength sports, which are taught by Eric Helms and Mike Zourdos, respectively, all the way through to a masterclass in setting up a personal training business, the SBS Academy covers all of that. The enrollment for it is now open and obviously I'd highly recommend, first of all, going and just checking out the course syllabus, and then if you know that's something for you then going and enrolling on that, which is highly recommended for me. And to do so, just go over to shreddedbyscience.com/academy, So it's shreddedbyscience.com/academy, and you can check out the course syllabus and then enroll for the course as well. I'll also pop a link to that in the show notes to this episode for everyone listening.

On to today's podcast and I'm going to be joined by Layne Norton, someone who many of you listening will have come across before and are very aware of his presence within the fitness industry and the coaching he

does, but also then on his competitive side within bodybuilding and powerlifting. And really, I think it's one of the really impressive things that hopefully we can get into, the fact that Layne has had to have a foot in so many different areas over the years from academically being published in peer review papers—he of course completed his PhD program under the supervision of Professor Donald Layman, which many of you regular listeners will remember being back on the podcast in like Episode 123, 124, something like that—but outside of academia, Layne has obviously been a competitor in both pro bodybuilding for a number of years, and then more recently has achieved massive success in powerlifting, winning USAPL Nationals in like 2015, and that same year he went on to win I think silver at the 2015 World's at the 93-kilo class, in the process breaking a squat world record or what was the world record at the time until David Ricks came along this year with his insane 310 squat or whatever it was. Layne just puts out an insane amount of content as well on his site Biolayne, provides coaching services. He's got a supplement line. He's also part of Avatar Nutrition, which I'm sure he'll mention later on in the show. And he's had a foot in all these areas, so a large amount of success and coming at it from an evidence-based perspective. So, interested to get into some of the things around both his competitive journey, and then also on the coaching side.

If you want to check out the show notes to this episode, they're going to be at SigmaNutrition.com/episode140, and if you go there you can get a link to anything that we end up mentioning in today's podcast. You can also get the transcript of this episode if you prefer reading or you just want to be able to go over some of this material again, and you'll also be able to get access to transcripts completely free to previous podcasts as well. So if you just sign there, we'll send you out the transcript as a PDF as soon as it's ready straight to your inbox, and then we can do that each week as new episodes arrive. So let's get into this week's episode with Layne Norton.

Layne, welcome to the show. How are you doing today, my man?

Layne Norton: Doing great. Thanks for having me on.

Danny Lennon: First maybe just to kick us off, I know that many listeners are going to be familiar with your background and we could probably spend all day getting into everything that's there, but I'm always interested to hear what people feel are the maybe key events or milestone moments or turning points along their journey, so what are the kind of first couple of things that come to mind if you are asked about events or moments or

accomplishments that you feel made a defining impact on your career, maybe even your life to this point now?

Layne Norton: Yeah, it's hard to find a defining moment. Well, I guess if I had to really, really go back, it would be starting to post on Biolayne.com message boards in 2001. That was when there wasn't 10 million members, there was like 3000, and yeah, just because that kind of started me down the path of where I eventually ended up. If I hadn't done that, I don't think I would have gotten to where I am. Because if you trace back the tree of kind of how it's gone, that's how I kind of started gaining my notoriety, was on there, really organically because that's the only way we had to do it. There was no social media back then. I mean, that was our social media. [Chuckles] So yeah, and then that led to me writing articles for them. That led to me just doing a lot of stuff for them, having a video series, which was I guess another turning point. That video series was pretty popular and, yeah, so I guess if I had to pick one thing that would be it and probably not what people were expecting, is my guess.

Danny Lennon: Sure, yeah. And then outside of that, I'm sure many people like I said have come across some of the stuff you push out online, but I suppose one of the reasons why you've got to this point and are kind of viewed in the esteem you are is because of both the application and then your I suppose research background that you come from as well. So just for maybe those that aren't familiar, can you fill them in on what you did in terms of academically, and then on the other side, both in bodybuilding and powerlifting, the kind of practical application of it too.

Layne Norton: Yeah, so I did my bachelor's in biochemistry at Eckerd College in St. Petersburg, Florida. Originally, I went there to do a BS in marine biology and I'd wanted to study sharks, actually. When I was graduating high school, that was when my passion for bodybuilding was really burgeoning. I ended up…I got there and my passion for marine science was kind of waning, come to find out there aren't any job in that particular field. I mean, you know, and money isn't everything, but you like to be paid for your work. So I just decided that, well, let's look in this bodybuilding thing. I said, well, there's no degrees in bodybuilding, so what's the next best thing is to learn about the human body. So I decided biology. I was doing a BS in biology my freshman year and my chemistry professor, my general chemistry professor—really cool guy—he said, "Layne, you don't want to do a bachelor's in biology." I said, "Why not?" He said, "Well, if you don't go to medical school, you'll just look like a med student who didn't get into medical school." And I'm like, "Okay, well, what do you

suggest?" He said, "Well, you should do biochemistry. You'll understand the body much better that way, and then you have a lot of options if you want to go work, if you want to go to grad school."

And so that was literally how I got to biochemistry, which I'm really, really happy I did, as an undergraduate. I think people specialize way too early and I think having that back—because biochemistry is basically metabolism. That's what you're learning. And having that broad background really, like quite frankly, made the classes in grad school pretty easy, to be honest with you, because I took the hard stuff in undergraduate. But there were some really tough classes in graduate school, like advanced metabolism was really tough, and there were some other classes, some exercise phys classes, some advanced muscle biology classes that were tough. But for the most part, my toughest classes were in undergraduate like analytical chemistry, instrumental chemistry, physical chemistry, all the chemistries, [laughs] but I really enjoyed those and I always like being challenged, so. In fact, my favorite type of classes were ones where I didn't get A's in, was where I was struggling to get a solid B, because I actually really remembered the material because I had to work so hard at it. And I think a lot of people, they just look at the grade as the outcome and don't think about the knowledge they actually took away from it, or people get A's and then they just disregard whatever they learn, and what does that really do for you? I've hired four people in my life for my company and I never looked at their GPA. I didn't care. All I cared about was, do they have knowledge and were they good? So I'm not saying the GPA's not important but, for me, I care more about what knowledge people have and what they take away from that.

So, anyways, getting into junior year of college, I really didn't know what I wanted to do with my life. I was writing articles for Biolayne.com That was fun, but I was getting $25 in store credit per article. It wasn't exactly paying the bills. And I just felt like the more I learned about biochemistry, the more I didn't know anything. And so I decided I'd like to go to graduate school to kind of, one, delay the real world, and two, learn more. So I obviously was very interested in nutrition and in particularly protein metabolism. I wanted to find out the magic number of protein, the amount of protein to eat to be jacked. So I started applying to different graduate schools. In fact, the way I found—I started looking at each school individually and looking to see if I could find professors that fit my interests, and I was getting nowhere.

So I just went to PubMed—this is when PubMed had kind of started—and typed in, I remember the search was “leucine skeletal muscle protein synthesis.” And the first result was Dr. Tipton at University of Texas, second result was Layman at Illinois, and third result was Jefferson at Penn State, all of them very classic researchers in amino acid and in particular branched-chain amino acid research. And I emailed all of them and Tipton didn't have any spots, but Layman and Jefferson did. I went and visited Layman in Illinois, really got a good vibe from him, really enjoyed my time talking with him, so I applied to Illinois, Penn State and Cornell and I got accepted to Illinois and Penn State. Cornell I didn't get accepted to, but that was more so there wasn't any professor that matched with my interests, or at least that's what I tell myself. [Chuckles] And so I went to Illinois, which is actually the number two—Illinois and UC Davis swap back between one and two for the number one nutrition school in the country, typically. So anyways, I got the chance to learn—I didn't realize how great Layman was at the time, and looking back I have a much better understanding of how great he really was. So I did a PhD in nutritional science there, studied protein metabolism as my concentration, and really, I mean it was a really, really hard, difficult, difficult time, but God, I look back with such fond memories on that and how much I learned and like what that did for me as a person.

And then competitively, I started out in bodybuilding, did my first show when I was 19, won a team division, won my pro card by age 24, did a pro show at age 28, won in my class at one pro show and placed top five in every pro show I did, and then along the way had some injuries. Got into powerlifting in the offseason from bodybuilding just as a way to kind of keep myself interested, I guess would be what I would say, and got to the point where I realized I was better at this powerlifting thing than I was in bodybuilding. And had competed in some other organizations, we'll say, not to slam them but just kind of backyard organizations, and finally decided to step up to USAPL, the IPF affiliate in the USA. A few years ago in 2013, I did my first meet with them and won my class at that meet, qualified for Nationals the following year, and decided, “Okay, well, let's give Nationals a shot.” And as I was progressing—shout out to Ben Esgro, he's done my programming—as I was progressing, I was looking at the numbers of the people who had won Nationals the previous year and I was like, “Okay, I could win.” [Laughs] But the way things work is when you're at Nationals and you're lifting against a hundred other people in your weight class and there's like class going on and there's a bunch of people in the room watching you and there's all these really high-level

judges, like it doesn't really matter what you did in the gym. I've seen a lot of gym heroes come to Nationals and get crushed. So anyways, but I did have a really good meet. I ended up winning, qualifying for IPF World's in the 93-kilo class, won the Arnold later that year in my weight class, and then went on to World's where I got a silver medal and then set what was at the time the world squat record of 668 pounds or 303 kilos at the 93-kilo class.

So yeah, I've had a pretty good run competitively and a hopefully decent run academically, and still keep my foot involved in research and whatnot. In the meantime, started my own business for coaching, did that about 10 years ago, took that to a pretty high level, and then have started other businesses like my supplement company Carbon and then the website I helped design, Avatar Nutrition, which is basically customized flexible dieting recommendations that we developed an algorithm for. Basically, you go to the website, enter in your nutritional information…or, I'm sorry, your anthropometric measurements – height, weight, age, body fat, etc., etc., and then it will generate custom macronutrient recommendations for you and then we'll adjust those every week depending on your goals and how you progress, and that's something that's less than $10 a month for people. So I've done all those, and then I have also a members area in my website, so [chuckles] in the second phase of my life I've become kind of a businessman or a science guy who's trying to do business I guess would be the best way I describe myself. So yeah, I've done a little bit of everything in the industry and I guess still looking for more and still looking for what the next big thing and next big leap I'll take me up to.

Danny Lennon: Sure. I think that gives a really good bit of context for people as to what we're going to discuss later on in the show and I'm certain you're going to get around to some nutrition a bit later, but first I have to ask you about this kind of current journey you're on in coming back from this injury because it's really amazing to look at this from the outside as someone who's been following this along and seeing the progress I suppose in real time, because for me having seen what you did at the 2015 IPF World's to then hearing about the nature of this injury and then seeing these updates of progress in little pieces from the outside going along, it's really amazing to kind of see that and I think it sums up a lot about maybe the mindset that seems to be an innate part of you. So first, maybe just for those who aren't familiar, could you just perhaps explain the nature and circumstances of that injury? And then, if you feel comfortable doing so, I'd love to hear about maybe the psychological process that you went

through from maybe that point and how it's kind of progressed up to where you are now in the kind of journey from there.

Layne Norton: Yeah, it's a good question, and if you lift weights it's not a question of if you're going to get injured, it's a question of when, and I always talking about this, everybody likes to talk about things and programming and whatnot with this optimal ideal of, “Oh, we're never going to get injured,” and I say, “Raise your hand if anybody in this room has never been injured,” and nobody raises their hand. So we know that obviously it's something that needs to be planned for, and now I actually do PT every week just as prehabilitation rather than rehabilitation.

So I'm no stranger dealing with injuries. I haven't had a ton of injuries but I have had some not severe but ones that took me out for a decent bit of time. When I was 20 years old, I played rugby and herniated two disks in my neck when I was making a tackle, and then when I was 26 or 27 I tore my right pectoral fully in the muscle belly. That took me 18 months to come back from and fully be back to full strength. So when I got injured this past year—actually I kind of struggle with injuries on and off. I had some soft tissue low back injuries that kind of nag me throughout the year, nothing disk or spinal but just like some strained muscles. As I was competing, that kept getting re-aggravated, and so actually one week before 2015 Arnold’s and one week before 2015 Nationals I strained my lower back and still ended up winning those contests ironically. And actually, even before World’s, four weeks before World’s, I couldn't even squat like within 100 pounds of what I ended up squatting at the World Championships.

So the one nice thing that that did was, those experiences, I learned not to put too much stock in a single workout session and just keep going and if I put in the work and put in the rehab and all that kind of stuff that things will usually work out. Well, it didn't work out for—I wanted to do the Arnold. This year was the first year they had a Raw Pro American at the Arnold Classic and I wanted to do that, and just four weeks beforehand I was squatting in the gym and I had a really whippy bar. I've always had a little bit of hip shift where my hips have shifted to the left when I got to the hole in the squat and it just kind of exaggerated a little bit, but I felt something happen, not pop or anything but I definitely felt something, and then it was just a decent amount of discomfort and pain. And instead of stopping the workout like a smart person, I decided to plow through it. And it was my left hip was in a lot of pain right under the greater trochanter, which is kind of like if you feel for your hip bone, it's basically

right there. There's a bursa capsule that the tendon slides in and out of. Well, I tried to kind of work through that. It just wasn't getting any better, and so I went to an orthopedic. The orthopedic says, "You've got bursitis," and gave me a cortisone shot because it was four weeks till the Arnold and I wanted to make it. Well, the cortisone shot didn't do jack, so I went back in and they said, "Well, maybe you just need two cortisone shots," so they gave me another cortisone shot and that didn't do jack. Actually, looking back, it's very unlikely that it was bursitis, which is what they diagnosed it as, because bursitis is usually a really slow-onset painful injury and you feel it throughout the day. It aches. And then once you warm up and you're lifting, it usually feels better. Well, mine didn't hurt at all during the day, but when I started lifting it would be incredibly painful. And what happened was, I mean, it got to the point where when I kept trying to work through it, work through it, work through it, I couldn't even squat 135 pounds without like an 8/10 pain. I think what it was is I tore or severely strained some muscle in that hip capsule because that fits more with the symptoms I was feeling.

So anyways, also at that time same time where I was trying to work through it, I went in and was bench pressing one day, my bench press was going well, and then one day I went in and my strength was way down and I thought, "Well, that was weird. Maybe I just had a bad day." And the next time I went in it was down again and noticeably on my right side, and I've had that experience before. I'm like, "Well, that's good. I've definitely got a pinched nerve." So, went and got an MRI and I remember the MRI tech as he was looking at my MRI, he looks me and he goes, "Yeah, you've got some stuff going on in there." And I'm like, "Oh, well, that's comforting." So I had two herniated disks in my neck and it caused me to lose about 100 pounds off my bench in a month.

Yeah, so dealing with that and the hip injury, I mean, it just got to the point—I did everything I could. I was doing traction for my neck, I was doing electrical stim for my hip, I did those two cortisone shots, I was taking high-dose anti-inflammatories – 2400 mg ibuprofen a day, and nothing touched it. It didn't help at all. And I just got to the point, like I said, where I couldn't even squat 135 without a large amount of pain and just I really wanted to make the World Championships this past year because it's very, very hard to qualify for that. You've got to win Nationals to have an automatic qualifier. Well, my class had like over 100 people at Nationals last year, so it's not a foregone conclusion that I'm just going to go in and win Nationals.

Danny Lennon: Yeah, that 93-kilo class is crazy.

Layne Norton: It's stacked, yeah. Well, at this point pretty much every class is stacked. It's like, good luck, you know what I mean? [Chuckles] Yeah, I just kind of…but at a certain point you kind of have to know when to back up and say, "Well, it's not going to happen this year. Let's try and get ready for the future." And so the original orthopedic I went to wanted to do a bursectomy, take my bursa out, and I was like, "Well, before we start cutting stuff out of me, maybe I want to be sure that it's actually bursitis because so far these two cortisone shots that were supposed to fix it haven't done jack." And I went to another orthopedic and he's like, "Yeah, what you're describing doesn't sound like bursitis at all," and he referred me to a PT in Tampa named Jamie Alhambra, who has been awesome for me. I did two sessions. I went from, like I said, not even being able to squat anything without pain to after two sessions with her I was able to do 135 pounds without much pain, and then basically she worked on getting me moving better, correcting my hip shift. Now I can squat straight up and down. There's no shifting of my hips. And yeah, like you've been seeing, once I got to the point where I could squat again, I've just been adding 10 to 15 pounds a week and doing 5x5 and just going up like that.

And once I was able to start moving without pain, I was upset that I didn't make the World Championships but the way I process things is if something is really hurtful or upsetting to me, and this is anything, like relationships or emotions or friend stuff or business stuff or competitive stuff, I give myself like a couple of days to really, really be upset about it, like actually actively put sad music on and like cry about it, you know what I mean? And that actually typically helps me get over it faster. So like I literally put on my emo music for two days, was upset about not being able to make the World Championships, and then said, "Okay, that's it. That's over. Now let's see what we're going to do next." And so I knew once I got moving better and I started being able to lift pain-free, I knew I'd be back. I'm still not back, but I did squat over 400 pounds the other day for fives with no pain. So I know I'll be back. I know that'll happen. I've had so many experiences where I've been able to kind of just stay the course and it comes back.

And I think a lot of people get too caught up in, you know, they quit because they get too caught up in, "Well, I can't ever get back to what I was doing," or "It'll never come back." Well, it's only been four months and I'm near 80% of the way back, so sometimes it's just trying to calm yourself down and looking at the situation and saying, "Hey, what's the

worst-case scenario here?" I had people tell me, "Well, this is it. You're 34 and your body's starting to break down because of the way you squat and blah, blah, blah, blah, blah," and I just didn't really pay attention to that because if it is, it doesn't help me to embrace that, and if it isn't then if I listen to that it's only going to make it worse for me coming back. So I just said, "Well, we're just going to put our head down and work and whatever happens will happen," and of course it's been coming back fine. So yeah, advice I guess I can give people who go through injuries like that is just put your head down and work and put the time in for rehab and typically things will work out.

Danny Lennon: Yeah, I think this has been a really good example of how to diligently come back from an injury in that not only giving up on it but I think then the opposite, and some people go the opposite way and try and jump up too early or get disheartened because their current lift is going to be so much farther away from what they've previously done, and then they don't have that patience to go through that diligent process that I think you're giving an example of with this current injury. So yeah, I think it's just a great example for people.

Layne Norton: One of the things to keep in mind is like the lower the value, the higher the peak. Like if you've been really, really low when it's good, you're going to appreciate it a hell of a lot more, you know what I mean? And so it's like when I tore my pec and I came back and was able to be competitive at a bodybuilding show, win my class at a natural bodybuilding pro show, I mean, man, you want to talk about like emotional, that was really cool. And same thing coming back from this one. So when I crush my PRs in a meet in the future, yeah, I'm going to be pretty damn pumped. [Chuckles] So it's going to make it that much better.

And you know, Matt Gary told me, he said, "Look at this like a puzzle. You're going to figure out another piece of the puzzle because obviously you were doing something wrong that caused this to happen, so now you get to fix that piece of the puzzle and you'll get even better."

Danny Lennon: Yeah, makes a lot of sense, and I think it's just one of those things that you see the people that are able to come back from these types of things and people are performing at more elite levels, it's almost a difference between being just good versus being the guys at the very top, is that they understand the idea of the whole process as opposed to just being able to handle things when stuff is going well. It just tends to be a kind of common theme that you see come up.

Layne Norton: I always tell people, “Show me an elite athlete who never suffered an injury.” It's going to happen. And so just understanding that and it's okay not to be happy about it, but if you dwell on it and—like feeling sorry for yourself doesn’t do shit, you know what I mean? I mean, I'm not saying you can never feel sorry for yourself, but at the end of the day you've got to kind of digest what happened. And I'm a big Game of Thrones fan and I like something Tyrion said, and that's, “It's better to face a hard truth than to act like it doesn’t exist.” And that is the truth, just accept what’s happened and figure out what you can do to move forward with it, and whatever you can do do that.

Danny Lennon: Yeah, it's interesting because it's one of those topics that I'm always interested to try and see what differences there are between whether that's a lifter or something else but say a lifter that gets to become very good versus those that go on and become a great lifter or get to an elite world-class level. I remember, I think I asked a similar question to Brett Gibbs both on the podcast and discussed it off-air as well, and the kind of one thing he kept coming back to was the difference between those is generally a lot of it at least is going to be down to the mindset and psychology of being able to deal with stuff like that, and then he said that's how he approaches it, that it's that mindset component. And that's not just what people typically think about motivation. I think it's like what we have just discussed there, having the correct mind frame to be able to tackle things like injury or any real obstacle.

Do you feel that as well that a lot of what’s got you to where you are, as someone who has fallen to elite bracket at a world level, that a lot of that has been simply down to being able to be maybe either, I don't know what the right term is, mentally stronger or confident and focused than, say, other people who don’t reach that level? Because I think there's, like you say, with the enormity of how powerlifting has kind of grown and just how many competitors there are now at such a high level, the differences can be small but I think, do you see that kind of same parallel that how much of that is kind of down to how you frame things psychologically?

Layne Norton: Oh, absolutely. I mean, now, I can't take somebody with really subpar genetics, with a subpar work ethic, and tell them, “Just think positive thoughts,” and they're going to go out and squat 600 pounds. That's not how it works. But when you get to elite level and all things are equal, yeah, absolutely. Like your mindset makes an enormous difference and just the idea of being able to stick to it even when things get rough. It's very difficult to convince people of that because you get caught up in that,

“Oh, woe is me,” kind of situation and you don’t focus on moving forward.

And confidence is a snowball effect. If you're confident, you're more likely to do well. When you do well, you're more likely to be confident, you know what I mean? So it can also go the other way. Like if you're not confident, you're not likely to do well and then you don’t do well, and so you're not confident, right? And so just telling someone to be more confident is really difficult. That's not something you can just tell somebody to do and all of a sudden they're confident.

So I think confidence comes from evidence—here we go—evidence in terms of history of, “Okay, this happened, I did this, and then this happened,” right? And so I got injured, I came back, okay. I got injured again, I came back again, okay. I got injured really bad and still came back again, okay. So when I get injured next time, it's not the end of the world. It's, okay, we're going to come back again.

That’s why I train pretty much how I compete in terms of setup on lifts and how I execute the lifts and all these sorts of things. Like I don’t mess with it too much. I don’t cut my squats high and I pause my bench and I lock out my deadlifts, like because when you get in high stress that builds your confidence for being able to hit them at a high level, because I see people when they do these lifts and they do them different than they plan to do them in competition and it's like, do you really think you're going to be able to execute under like the highest level of stress that you're ever going to come across competitively? Of course not. I even train with a high amount of I guess stress, I would say, in terms of like I get pretty amped up and I visualize and I do it just like I would in a competition. A lot of people say that that's a bad idea, you should save that for the competition, but I look at it as training that skill. And so when I get to the competition, that's all second nature for me, and people who have seen me compete know I can go from just being conversational just like this to basically rage level 9000 in about 30 seconds, and that's just from training that for so long. But the thing is, I can still be under control. I can get into a rage and still hear commands and—I mean, even in Nationals this past year when I walked up my first squat, it was taking a long time for them to give me the squat command and I hear the judge to the left say, “Lock out your left knee,” and I locked it out and then they gave me the squat command. So if I had just been completely out of control, I wouldn't have heard that and I never would have gotten the squat command. And so I think that practicing that skill helps me, whereas I see some people who

just lift completely calm and then they try to get amped up for a meet and they have no control whatsoever because they'd never trained that way.

So I think part of confidence is just doing things a certain way, seeing how you respond, and then saying, “Okay, well,” then just building on that, right? And so, like I got a pretty damn good run from 2014 to 2015 where I won a local meet and then I won Nationals and then I won the Arnold, and then I got second at World’s, the squat record, and then won Nationals again. And that was just one of those things where I started doing well and it snowballed.

And so I think for people out there who aren't at that level, the biggest thing is like set little checkmarks like to build your confidence. Like don’t wake up one day and you've just started powerlifting and say, “I want to win Nationals in a couple of years.” Well, you're going to have to give yourself checkpoints along the way, like say, “Okay, let's get top three at a local meet,” right? And then once you do that, “Okay, let's try to win a local meet,” and then once you do that, “Okay, let's try to do really well at a bigger regional meet.” Okay, and then once you do that, “Okay, let's try to win a bigger…okay, when we've qualified for Nationals, alright, let's try to get top 10 at Nationals.” Alright, got it. “Then, let's try to do top five, top three, win.”

Now, maybe you'll win faster than that, but when you give yourself…if your only goal is to win Nationals in the first year you go and you get 10th, now you might have been really happy with that if somebody told you that a few years ago, but since your goal was to win, and you didn't give yourself a timeframe but your goal is to win, you're going to be disappointed. And so I think giving yourself kind of those checkmarks along the way is really important for building that confidence.

Danny Lennon: Right. It's an accumulation of those as opposed to just one set accomplishment, I suppose. Yeah, I think that's huge.

Layne, if we turn to a couple of different topics that I'd kind of earmarked as things that I've found of interest, I know you've touched on it on some points and particularly just while we're still on powerlifting, I think one of the things I find interesting is when there are discussions around people trying to look at what’s the best body composition for powerlifting because, again, there has to be a trademark or a kind of a tradeoff of, “We don’t have to get someone absolutely shredded because there's going to be some downside on maybe their training while they're doing that or

recovery, etc., and performance is still going to be the number one goal." But then we have this kind of discussion around when we're looking at body composition for powerlifting, and obviously it's a weight-class-based sport so we want someone for that given weight class to be able to get the best performance out of that body weight, when it comes down to muscle mass then, at least from a biomechanical perspective, it seems kind of a logical thought that for that given weight just put on as much muscle mass for that class as you can and that's going to lead to you being stronger. And I know, for example, on the show before Greg Nuckols has discussed ideas around I think like the cross-sectional area of muscle, the angle of pennation, all these things that tie into at least pointing towards more muscle mass is going to generally lead to you just being stronger regardless. Then on the flipside we have, as you would have seen maybe like Jeremy Loenneke arguing a slight kind of variation on this so that maybe there's not as much evidence that just seeing a change in muscle size with training is going to directly lead to a change in strength. So maybe you can perhaps outline your own thinking on this whole thing like some of the context on some of maybe what I've just said there, you know kind of thoughts on that area of where we're looking at body composition for powerlifting.

Layne Norton: Yeah, I mean, I think it's impossible to…well, not impossible, I don't want to say that, but it's going to be really difficult to talk about things across individuals and I'll give an example as to why. Yes, in a perfect world, we would say, we'll just have as much muscle as possible because body fat isn't actually involved in moving weight, right? But body fat does provide kind of energy, make you feel good, and I mean, for lack of a better term, cushion.

Let's take an example, like me. I went down to 205 from 220 and performed better. I had better numbers. And if I go up to 230, at least in my experience, it doesn't make me that much stronger. I probably would get a little bit stronger but I don't get that much stronger. And at 205, I was leaner than Bryce Lewis who used to compete in 205s and I would beat Bryce Lewis. Beat him twice, at the Nationals and then at the Arnold. And Bryce went up a weight class. I mean, again, Bryce is like five-six or five-seven. Like he's short. No offense, Bryce. [Chuckles] And like I said, I was leaner than him at 205, and he went up to 231 and he is now absolutely annihilating stuff, like absolutely just crushing weights. And he's put on quite a bit of body fat and now he's probably put on some lean body mass too, for sure. But I think it's safe to say it was probably more

body fat than it was lean body mass, but he is crushing weights. Like he set a world record at the Arnold. Like it's crazy. And he just…I saw him deadlift 800 pounds I'm like**,** that's nuts. So for him, going up that weight class for whatever reason, and I'm not sure what the reason is, probably just better joint angles based on body fat—I don't know, right? Like I'm not a biomechanist, I know that. But for whatever reason, it made him stronger. So I think that, yes, ideally more muscle mass we're going to be able to move more weight, but also like some people just are not going to do as well just gaining indiscriminate weight and others are going to do well. So yeah, I think that…

And I think a lot of what Jeremy says, and I understand what he's saying, is that if you take two people, one person can have huge legs, another person can have small legs like, oh, I don't know, me… [Chuckles] If you look backstage at World's when everybody's warming up and you're looking at everybody, I'm going to be like the last person you pick to squat the most, you know? Like I'm just going to be the last guy. But I still squat more than everybody else. But, and this is the important point, if you take someone, if you take me and you put another 15 pounds of muscle on me, do we really think I'm going to be not stronger, right? And also, like now, yes, my quad's aren't as big as somebody else who maybe squats less but my quads are much bigger now that I squat 668 than they were when I squatted 405. Now, there are other people who squat 405 who have bigger quads than me, but you can't compare those things because things like pennation angle and CNS activation, all these sorts of things come into play. But within the individual, I think that there's pretty good evidence that if you increase muscle mass and you increase the cross-sectional area of the things that produce force that you will get stronger.

So we're actually on, not to kind of co-opt your podcast, but on our podcast Physique Science Radio we're actually going to set up a debate between Jeremy and Mike Zourdos and Eric Helms and, yeah, I think that's going to be really good for people because—I understand what Jeremy is saying that strength is a specific skill and, for example, everybody's done this where they've gone and hit like a 10-rep PR and plugged it into a 100-max calculator and it gives you some astronomical number and you're like, "How the hell does that work?" That's because 10 reps is not specific to a 1-rep max, like it's just not. Now, you may be stronger for 10 reps and it may give you a good indication that you're going to be able to do more weight at a 1-rep max once you get skilled at that 1-rep max, but the idea of that it will predict your 1-rep max is pretty

far off, and then the closer you go down the more accurate it gets. And then obviously, when you're actually doing 1-rep max and you're doing that specific skill, you're more likely to be accurate.

Danny Lennon: Yeah, I think that's…and that really ties in with the point you made about we really have to consider it within someone as an individual as opposed to comparisons because even on that point you could take two guys and have dramatically different numbers for a 10-rep max, and then when it comes down to hitting singles or doubles, it could be the guy who had a 10-rep max ends up able to handle that weight better, right?

Layne Norton: Absolutely. Absolutely. I mean, I tend to be very much able to grind a lot of reps. I mean, if you look at like a five…like look at videos of some of my 5-rep maxes, I'll do 1 rep and it will look like a 1-rep max. I mean, I didn't have time…like I've taken bar speeds. I was at our VIP camp last week, I was training with a couple of clients of mine, and I squat probably 200 pounds or 150 to 200 pounds more than they do, and when we were doing 315 their bar speed was twice as fast as mine. My bar speed when it gets to like a 1-rep max almost doesn't register because I can just grind really, really well. Whereas somebody like, for example, Bryce Lewis, he's either going to smoke it or he's going to miss it, you know what I mean? Again, that's a negative on Bryce, that's just his style, right? That's just how he lifts. And so somebody like me, I can always…like if I can do it for one, I can probably do it for two. That's just how I am. So I think that, yeah, looking at a 10-rep max, especially between individuals, is not predictive of what they're going to do for the 1-rep max.

Danny Lennon: Yeah, for sure. Layne, we're coming close to time here but just before I get to the last question or two, one thing I'm always interested to ask people, and again this can be quite a vague question but I'll throw it out anyway, if there's one message that you either wish was less prevalent in the fitness industry, what would that be or, rather, if there's a message you wish was more prevalent that maybe isn't discussed as much, is there anything that kind of comes to mind first?

Layne Norton: Well, I guess I find I've gotten more philosophical as I've gotten older, so I guess the message I would say is that, you know, people know me as Libertarian Layne – let people do what they want. Like I see all this bashing amongst different groups, like CrossFit's very popular to bash and then CrossFitters want to bash bodybuilders because they just want to look good and Olympic lifters want to bash powerlifters and like all back and forth. At the end of the day, like if it gets somebody involved in fitness

and it gets them off the couch and it gets them doing stuff to enjoy, who gives a damn what somebody else wants to do? Like I think we should be supportive of those people. Yeah, I'll put up stuff making fun of CrossFit every once in a while because a lot of times they have some goofy theories about nutrition and whatnot, but for the most part like…I mean, I have clients who are like, “Layne, don’t get mad. I want to do CrossFit,” and I'm like, “Okay, do CrossFit then. Like if that's what you enjoy.” And I just think that we should be a little bit more embracing of each other and not try to have a dick-measuring contest about whose sport is better because, you know, I love powerlifting, I don’t have any desire to do Olympic weightlifting, but somebody else is going to be the opposite. Olympic weightlifting is going to be their jam. So I think that we should just I guess show a little more support towards each other and what we want to do.

And also the idea that there's one right way to do things, you know what I mean? [Chuckles] This drives me crazy. There's a whole slew of ways to do things. I mean, even…I was at a speech last week and we were talking about daily undulating periodization and the person thought that daily undulating periodization meant you squat, bench and deadlift three times a week, and I had to explain that, no, this is a system of program…like a concept of programming and there's an infinite number of ways to do it, like literally an infinite number of ways to set up a daily undulating programming.

And so I think we get too caught in this mindset of, “Hey, what’s the best thing for this? What’s the best thing for this? What’s the worst thing for this?” Well, it depends. Like I always tell people like if somebody’s supposed to be an expert and they don’t give you context on everything and they're not saying “it depends” or “I don't know” pretty frequently, they're probably not an expert because most—like I can tell you one thing that doing a PhD will do, is it will humble the shit out of you because you are going to get shredded at some point by somebody in your field, and I have been shredded multiple times and every time it was good for me. You think about things a certain way, you go back and you learn things a little bit better, you become a little bit better at what you do.

And yeah, so the idea that—and so it also gets you from backing off really powerful statements, because in scientific journalism if you make a really strong statement, you better have some really strong evidence. And so yeah, like now when we make statements in journals, it's like, “Well, we

think that this thing is important but maybe only in this situation, and when this population and none of these conditions," right?

Danny Lennon: Yeah.

Layne Norton: So yeah, I think that those are, I guess, like the extremism of the fitness industry is I wish what we could get away from a little bit.

Danny Lennon: Yeah, I totally agree. It's something I've kind of brought up before that it's a red flag when you hear someone either talking in absolutes or, like you mentioned, telling you this is the answer to this, and the best example I can give people is, as you all know, if you go…

Layne Norton: Poliquin? Poliquin?

Danny Lennon: [Laughs]

Layne Norton: [Laughs] Sorry, Charles!

Danny Lennon: And then like on the flipside where people can see where…like what you mentioned with giving context, if you just go to kind of any academic conference where you see people who are in frontline research discussing their own work, they basically spend an hour talking about the certain caveats to that and where they may be wrong or where there are other pieces of it. Like as opposed to saying how great their stuff is, they spend most of the time discussing where there needs to be either more work or caveats to where it could potentially be an issue, and that's usually where you see the kind of true experts.

Layne Norton: Totally.

Danny Lennon: So I think that's a really important point.

Layne Norton: Absolutely.

Danny Lennon: Layne, before I get to the final question to end the show on, maybe just let people know where they can either find you on social media or any of the websites that you mentioned earlier that they can track down some of the work you're doing.

Layne Norton: You can find me on pretty much everywhere as Biolayne, B-I-O-L-A-Y-N-E. That's Instagram, YouTube, Twitter, Snapchat, and the only one that's different is my Facebook page is Facebook.com/laynenorton. And then obviously my website is where everything runs through Biolayne.com, and we've got a members area in that website as well where

I do a live webinar every month and then also have premium articles and weekly Q&As and a bunch of cool stuff. We're really expanding that with a really good lineup of authors there. And then Avatar Nutrition, obviously, that I kind of touched on a little bit earlier. That website is going to change the game. We've almost got 5000 members already and it's got a really good retention rate, and at $10 a month for basically customized flexible dieting coaching, I mean, it's impossible to beat if you're on a budget. I mean, obviously, there's always going to be a market for personal coaching—a computer doesn't have room to consider nuance—but we really did a lot of work. I mean, that was a year and a half of work on setting up that algorithm and setting up how the…and we're adjusting it. Our members know, if they're listening to this they can comment maybe, just how often we're updating it. I mean, it's pretty much weekly we're adding something new to it or tweaking something. And so for example, now we have something where when they log in and they put in there information, if it makes an adjustment to the macros, it has a popup that tells them why that adjustment was made. So that's what we've been working on for like the last month. And if there's no adjustment, it also tells them why no adjustment was made. [Chuckles] So it's pretty cool system.

Danny Lennon: It's all good. I'm sure people will get a ton of value from that stuff, so I'm going to link up to all of that in the show notes for anyone listening if you do want to check any of the things that Layne just mentioned if you want to check that out.

So Layne, we'll end the show on the question that I end every episode on and this can be to do with anything, even outside of what we've discussed today, and it's simply if you could advise people to do one thing each day that would improve their life in some aspect, what would that one thing be?

Layne Norton: Goal-setting, I guess. That would be it. And I think it's like periodization. You have a macro cycle, a meso cycle and a micro cycle, right? So macro cycle is your yearly kind of long-term goals, meso cycle is like your short- to intermediate-term goals, and micro cycle is like your weekly goals. And I actually have like daily goals. I'll get up and write down like three things. This is what got me through graduate school, actually, because I actually was almost on probation because I was so piss-poor at what I'd done my first few years of graduate school. I started going in…because I got disheartened because it was so hard, not the classes but the research, so I just started going in every day and writing down three things I had to get

done that day and just did that every day, and that's what got me through. And so I still do that. Like I'll wake up each morning and say, “Okay, what do I need to do today? Alright, let's pick out three things I absolutely have to get done.” And if I get more done than that, then that's great, but it has to be realistic too. Like those have to be realistic goals. And then if I check those off, then I've got my, “Okay, what do I want to get done this week and this month or a couple of months?” right? And then after that, it's like, “Alright, what are my long-term goals within the year or next year?” and I'm always thinking about those and I'm always changing those and evolving those. And I think that when you do that, the little steps you take every day end up adding up to big, big changes. They say the only way to eat an elephant is one bite at a time.

Danny Lennon: Perfect. A great way to finish, Layne. That was really awesome advice and some it'll be something that if people take action on is going to be really useful. And with that, Layne, I just want to say thank you so much for not only giving up your time today but for the information as well and the work you continue to do. It's much appreciated. So thank you very much, man.

Layne Norton: Absolutely. Thanks for having me on. I really appreciate it.

Danny Lennon: My absolute pleasure.

So there you go. That was our interview for this week. Remember, the show notes are at SigmaNutrition.com/episode140. And if you want to find me on social media, then just either search for Sigma Nutrition on Facebook or you can follow me on Instagram at my handle, dannylennon_sigmanutrition.

Finally, for anyone interested in comprehensive personalized online coaching for performance nutrition and/or strength or conditioning or powerlifting coaching, then check out details of the Sigma Nutrition and Performance online coaching program. If you just go to SigmaNutrition.com and click on the online coaching tab, you'll find all the details, how the process works, some of the coaching that we have there, some of the resources you'd have access to, etc., etc. And then if it's something for you, there is a place to apply for a spot on that program.

That brings a close to this week’s episode. I really hope you enjoyed the episode and gotten something from it, and if you did I'd be extremely grateful if you share it on social media or tag someone or just let people know about the podcast. It helps get out good-quality evidence-based

information. So that's the list for this week. I will be back in our next episode and I will talk to you then.